

# Rainbow Creek TMDL – Total Nitrogen and Total Phosphorus

Resolution R9 2005-0036

Presented by

**Alan Monji**

San Diego Regional Water Quality Control Board

February 9, 2005

# Rainbow Creek TMDL - Overview

- ❖ Agenda Package
- ❖ Rainbow Creek TMDL Review
- ❖ Implementation Measures
- ❖ Response to Comments
- ❖ Key Issues

# Rainbow Creek TMDL – Agenda Package

- ❖ Executive Officer's Summary Report
- ❖ Resolution R9-2005-0036
- ❖ Basin Plan Amendment
- ❖ Technical Report and Appendices
- ❖ Response to Comments
- ❖ Comment Letters
- ❖ Errata Sheet

# Rainbow Creek - Watershed





# Rainbow Creek - Problem Statement

- ❖ 1996 303 (d) List for Eutrophic Conditions
- ❖ 2002 – Total Nitrogen and Total Phosphorus (Nutrients)



# Numeric Targets - Total Nitrogen and Phosphorus



## ❖ Biostimulatory Substances Objective

❖  $TN = 1.0 \text{ mg/L}$

❖  $TP = 0.1 \text{ mg/L}$

# Rainbow Creek TMDL – Source Assessment

- ❖ Point Sources of Nutrients in the Rainbow Creek Watershed
  - Interstate 15 Freeway
  - County of San Diego Municipal Separate Storm Sewer System (MS4)
  - Regulated under NPDES permits

# Rainbow Creek TMDL – Source Assessment

## ❖ Non Point Sources of Nutrients in the Rainbow Creek Watershed

- Agricultural Fields\*
- Orchards\*
- Commercial Nurseries\*
- Residential Areas
- Undeveloped Land
- Septic Disposal Systems\*
- Atmospheric Deposition

\*Conditional Waivers of waste discharge requirements



# Rainbow Creek TMDL – Current Nutrient Loading

Source Type	Method of Estimation	Annual TN Load Estimate kg N/yr	Annual TP Load Estimate kg P/yr
Land Uses (surface runoff)	Export Coefficients * Acreage	2,662	262
Caltrans I-15 (storm water runoff)	Runoff Volume * Typical Highway Concentrations	187	12
Background (surface runoff)	Flow * Regional Background Concentration	779	116
Septic Tank Disposal Systems (ground water)	Flow * Baseflow Concentrations	200	N/A
Air Deposition (surface water)	Deposition Rate * area of surface water	40	2
<b>Total</b>		<b>3,868</b>	<b>392</b>

# Rainbow Creek TMDL - Load Allocations

In summary, the TMDL equation is:

$$\text{TMDL} = \Sigma(\text{WLA}) + \Sigma(\text{LA}) + \text{Background} + \text{MOS}$$

	<u>Total Nitrogen</u>	<u>Total Phosphorus</u>
$\Sigma$ WLA	82 kg N/yr	8 kg P/yr
$\Sigma$ LA	714 kg N/yr	33 kg P/yr
Background	779 kg N/yr	116 kg P/yr
<u>MOS (5%)</u>	<u>83 kg N/yr</u>	<u>8 kg P/yr</u>
TMDL	1,658 kg N/yr	165 kg P/yr

# Rainbow Creek TMDL – Implementation Measures

## ❖ CalTrans –

- ❖ NPDES Storm Water Permit

## ❖ County of San Diego –

- ❖ Nutrient Reduction Management Plan
- ❖ Groundwater Investigation
- ❖ Management Agency Agreement
- ❖ Control MS4 discharges to Rainbow Creek

# Rainbow Creek TMDL – Implementation Measures

- ❖ Calif Dept of Forestry and Fire Protection –
  - ❖ Investigate discharge from treatment system



# Rainbow Creek TMDL – Implementation Monitoring

- ❖ County of San Diego and CalTrans
  - ❖ Prepare, submit, and implement an Implementation Monitoring Plan
  - ❖ Other nutrient dischargers in the watershed.

# Technical Report – Summary of Revisions

- CalTrans schedule extended
- CalTrans waste load allocations updated
- Load Allocations modified based on comments
- Nutrient Reduction Management Plan
- Section 12 – Added in cost information from CalTrans.

# Rainbow Creek TMDL – Response to Comments

- ❖ Comments and testimony received at the Dec 8, 2004 Board Hearing
- ❖ Comments received during written comment period (closed Dec 29, 2004)

# Rainbow Creek TMDL – Issues

- ❖ Issues addressed in Response to Comments document
  - ❖ Supporting Document 4
  - ❖ Appended to Technical Report (App O)
  - ❖ Technical Report
  - ❖ Appendix M
- ❖ Key issues identified in EOSR



# Technical Report and Response to Comments - Issues

1. Public Notification
2. Calif Water Code 13225(c)
3. Nutrient Reduction Management Plan (NRMP)
4. Management Agency Agreement (MAA)
5. Adverse effects on Beneficial Uses
6. Biostimulatory Water Quality Objectives
7. Economic Analysis

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# Technical Report and Response to Comments Issues – Public Notification

- *Public notification inadequate*
- Letters sent to 370 landowners in Rainbow Valley
- Notice and article published in Village News newspaper – Fallbrook, CA
- Draft technical report available at the San Diego Co. Library, Fallbrook, CA
- Notices sent to interested parties mailing list

# Technical Report and Response to Comments Issues – CWC 13225c

- *Concern over requirements on the County*
- *Request for cost/benefit analysis in the technical report*
- Regional Board can require submittal of NRMP
- Cost analysis will be provided



# Technical Report and Response to Comments Issues – Nutrient Reduction Management Plan

- *NRMP requirement on the County*
- Regional Board can require submittal of NRMP
- Option to use alternate or additional activities
- Section 9.7 modified to address Counties issues

# Technical Report and Response to Comments Issues – Management Agency Agreement

- *County concerned with MAA*
- Agreement will be drafted after TMDL adoption.
- Participation is voluntary

# Technical Report and Response to Comments Issues – Beneficial Uses

- *No demonstrated negative impacts on Rainbow Creek due to elevated nutrients*
- Water Quality Objective for TN and TP exceeded
- Water quality monitoring in App B
- TMDL required by law
- Commenters have not submitted any evidence to dispute water quality data

# Technical Report and Response to Comments Issues – Water Quality Objectives for N and P

- *Regional Board misinterpreting the Biostimulatory Substances water quality objective*
- Comment addressed in Tech Report, Response to Comment 2002, and Response to Comments 2004
- Basin Plan WQO appropriately applied



# Technical Report and Response to Comments Issues – Economic Analysis

- *Economic analysis was not adequate*
- Economic cost of compliance
- Formal cost-benefit analysis not required
- Reasonable methods of compliance –  
Section 11.4
- CalTrans information

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